

in addition to one long terminal spur; hind tibia with three bristles, one at basal third on outer edge, one just before middle on the front side and one just before tip on front side in addition to two apical spurs: in addition the hind tibia is transversely striated on the hind (i. e., inner, as the leg folds next to the body) side near tip. Wings yellowish, the veins yellowish brown: costa not thickened, reaching almost two-thirds the length of the wing, its bristles very short and dense; third vein very finely bristly as far as the fork; first vein ending midway between the humeral cross-vein and the tip of the third; second vein lying very close to the third, from which it emerges at a very slight angle; fourth vein curved strongly at base but straight beyond and faintly recurved at apex, ending at the wing tip; fifth and sixth slightly sinuous; seventh distinct. Halteres clear yellow.

Described from three females sent to me for identification by Mr. C. W. Johnson. Type from Kingston, R. I., May 7, 1905. Paratypes: Riverside, Mass., May 20, 1905; Hampton, N. H., May 16, 1905 (S. A. Shaw). Type in the collection of the Boston Society of Natural History.

This species resembles *C. variabilis* Brues from Colorado and Washington more closely than any other described species and may possibly be only a well-marked form of *variabilis*. However, the halteres are pale, there is much more of the orange color on the abdomen, and there are only two supra-antennal bristles. From *C. thoracica* it differs by the non-thickened costa and from other related species in the chaetotaxy of the tibiae.

MUSCOID PARASITES OF THE COTTON-STAINER AND OTHER LYGÆIDS.

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The only muscoid parasites of *Lygæidæ* so far known in any stage have come to light in Sicily and Peru. The number of species has now reached four, one of which has been reared to the adult. The finding of these may be taken in chronologic order.

1) Neilsen mentions finding what was probably a muscoid maggot (*Snyltefluecart*) in the abdomen of an adult of *Lygæus saxatilis* Scop. in Sicily. The fly was not reared. The species may have been a *Clytiomyia* (recorded from Sardinia), *Eliozeta*, or *Elomya* (*Ananta*), less likely a *Xysta*, *Cistogaster*, or *Besseria*.

2) The next finding of muscoid maggots in *Lygæids* was by

the writer at Piura, Peru. Three maggots were found in adults of *Stenomacra* sp. near *limbatipennis* Stal, July 27 (one in 3rd stage), and July 28 (one in 2nd, and one in 1st stage), 1911. In each case one maggot occurred alone in the abdomen of the host. On August 19, 1911, a dried puparium of the same species was found in the contents of a box in which adults of this host had been placed on August 1. The fly was not reared. The species is almost certainly *Xanthomelanodes peruanus* Towns., which is very abundant in the Piura valley, as is likewise the host.

Anal stigmata of third-stage maggot and puparium—The anal stigmatal plates are rather narrowed, not as broad as long, closely approximated, well raised as on a short process; the three slits are ridge-like, disposed at about $22\frac{1}{2}^{\circ}$ angle to the long (dorso-ventral) axis of the plates, rather elongate, sharp, well raised.

3) On February 3, 1911, the writer collected 817 adults of *Dysdercus ruficollis* Linné on cotton in the Chira valley between Sojo and Macacará, picking and putting in with them at the time some opened cotton bolls and keeping them alive in a fine-screened wooden cage as long as they would live on mashed moistened cottonseed, in the hope of securing parasites. This species is the common cotton-stainer of the Peruvian coast region. No sign of muscoid parasitization was obtained from the lot other than the finding on February 10 of a small muscoid puparium in the lint of one of the opened cotton bolls that had been put in the cage February 4. This puparium had transformed from a maggot that had evidently escaped from a stainer to the lint of the opened boll before collection. The puparium proved to be parasitized, a *Perilampus* sp. issuing from it on March 2, 1911. Mr. H. S. Smith's recent investigation of the planidium stage of *Perilampus* shows that it enters the muscoid maggot while the latter is still *in situ* within the body of its host. This explains the finding of the present parasitized puparium within a cage which the adult of *Perilampus* could not have entered. The hyperparasite was determined by Mr. J. C. Crawford. The puparium was probably that of *Acaulona peruviana* n. sp. It was sent in with the reared hyperparasite.

My assistant, Mr. E. W. Rust, had better success in rearing the fly in 1912. From 594 adults of *D. ruficollis* collected at various dates during the last week of September and the first week of Octo-

ber at San Jacinto in the Chira valley, a little below Macacará, there issued on October 29, 1912, two flies, a male and a female, of *Acaulona peruviana* n. sp.

Acaulona peruviana sp. nov.

Length of body, about 7 mm.; of wing, about 6 mm. Light yellow to tawny yellow and deep golden. Face including parafacials silvery, with a golden sheen; that of male hardly more golden than that of female. Parafrontals deep gold in both sexes, frontalia dark brown to blackish. Antennæ and palpi yellowish, former tinged with brownish on front edge. Occiput golden. Thoracic scutum broadly deep gold on borders and transverse suture, leaving the four broad subcoalescent vittæ in two patches of blackish before and behind suture; the parts of vittæ in front of suture more distinctly defined, especially in the male, of which the outer are shorter and broader, and well separated from the inner. Scutellum of female dusky, narrowly yellowish on tip; that of male more yellowish, basal half or less dusky. Pleuræ and coxæ silvery, with golden tinge. Abdomen of female rather tawny yellowish to gold, that of male bright light yellow in a well-defined elongate area on each side; irregular soft brownish median fascia, its sections widening posteriorly on hind margin of each segment, usually more conspicuously so in female; last two segments (5 and 6) of female and last segment (6) of male wholly yellowish; fifth segment of male largely dusky. Abdomen of male narrowed and flattened, elongate; that of female widened, swelling on sides, arched. No true abdominal macrochaetæ, but the hairs of male in some cases simulate them. Femora largely yellow, the front ones least so and quite blackish above, the hind ones dusky only on tip; rest of legs blackish. Tegulae yellow to golden, especially on disc. Wings blackish on less than costal one-half, abruptly subhyaline on rest; apical cell clear except sometimes on front margin and tip, closed in margin.

This species seems more closely related to *A. tehuanthepeca* Towns. than to *A. costata* v.d.W.

Described from two reared specimens, male and female, San Jacinto, Chira valley, Piura department, Peru, issued October 29, 1912. These types will be deposited in the U. S. N. M. The species is comparatively rare, only five specimens having been collected by the writer in Peru during three years, these being four females and one male as follows:—One female, Somate, Rio Chira, November 18, 1910, on flowers of *Telanthera* sp.; one male on foliage, Chapairá, Rio Piura valley, May 21, 1911; two females, Cañada de Samán, Chira valley, February 14, 1912, on flowers of *Philibertella flava*; and one small female (about 5 mm.), Sullana, Chira valley, February 17, 1912, on foliage.

This species will be difficult to distinguish from *Xanthomelanodes peruanus* until one becomes familiar with the generic and specific

characters of the two forms. *X. peruanus* has short but pronounced abdominal macrochætæ, abdomen subcylindrical in male and nearly same but shorter in female, the black of wings graduates into the subhyaline, the femora are blackish, the face golden especially in male, the abdominal triangles are shining blackish to black, the tegulæ are pale yellowish to whitish, the scutellum wholly black and thoracic vittæ more clearly defined. *Acaulona* shows the distinctive facies of the *Trichopodiæ* in the male sex, and rather that of the *Polistomyiæ* in the female sex, only lacking the cilia of hind tibiæ.

Puparium—Rather short-stout in form, swollen. The anal stigmatal plates are broad, contiguous, closely approximated, each nearly as broad as long, not raised; the three slits are ridge-like and obliquely disposed, being at about 45° angle to both axes of the plates, rather short and sharply linear, a very little raised, their bases swelling.

(4) From the same lot of 594 adults of *D. ruficollis* there was also found issued October 29, 1912, with the above two specimens of *A. peruviana*, a third puparium still containing the fly and supposed by Mr. Rust to belong to the same species. It proves to be an entirely distinct genus from both *Acaulona* and *Xanthomelanodes*. The fly has not issued, and the contents are probably dried. The anal stigmata are well produced and prominent, approximated, and the three slits or divisions of each are swollen tuberculate instead of linear ridge-like.

Puparium—Length about 6 mm., being about the length of the *Acaulona* puparium but not so swollen. Anal stigmatal plates produced into a rather high process, height about equal to long axis of plate or dorsoventral diameter, each plate rather narrowed, the two approximated but not actually contiguous; the three slits appear tuberculate by reason of their greatly swollen bases, each plate presenting the appearance of three rounded divisions, the axis of slits at about 45° angle to both axes of plates, the slits themselves apparently irregularly compressed-sinuate.